STATE OF CALIFORNIA — ENVIRONMENTAL PROTECTION AGENCY

DEPARTMENT OF TOXIC SUBSTANCES CONTROL

REGION 2
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BERKELEY, CA 94710-2737

August 15, 1995

N00217.003117
HUNTERS POINT
SSIC NO. 5090.3

Engineering Facilities Activity, West
Attn: Mr. David Song [1832.3]
900 Commodore Drive
San Bruno, California 94066-5006

Dear Mr. Song:

PHASE 1B ECOLOGICAL RISK ASSESSMENT QUALITY ASSURANCE PROJECT PLAN HUNTERS POINT ANNEX

The Department of Toxic Substances Control (Department) is forwarding enclosed comments on the above report for your consideration. Comments from the Department of Fish and Game are also enclosed.

Should you have any questions regarding this letter and would like to seek clarification, please call me at (510) 540-3821.

Sincerely,

Cyrus Shabahari
Project Manager
Office of Military Facilities

Enclosures

cc: US EPA, Region IX
Attn: Sheryl Lauth
Mail Code H-9-2
75 Hawthorne Street
San Francisco, California 94105

Regional Water Quality Control Board
Attn: Richard Hiett
2101 Webster Street, Suite 500
Oakland, California 94612

California Department of Fish and Game
Mr. Attn: Mr. Michael Martin
20 Lower Ragsdale, Suite 100
Montery California, 93940

To: Cyrus Shabahari
Region 2
Department of Toxic Substances Control

From: Fred Seto, Ph.D. Fred
Hazardous Materials Laboratory
Department of Toxic Substances Control

Date: July 25, 1995

Subject: Review of Draft Quality Assurance Project Plan, Phase 1B Ecological Risk Assessment Work Plan, Engineering Field Activity West, Naval Facilities Engineering Command, Hunters Point Annex, San Francisco, CA, July 5, 1995

As requested, we reviewed the Draft Quality Assurance Project Plan, Phase 1B Ecological Risk Assessment Work Plan, Engineering Field Activity West, Naval Facilities Engineering Command, Hunters Point Annex, San Francisco, CA, July 5, 1995. Our comments do not cover bioassay related subjects such as Bioassay Protocols, Bioaccumulation Test Protocols, and Bioassay Quality Control; and are as follows:

1. Page 34, section 8.0 states that the subcontract laboratory will be certified by the California Department of Toxic Substances Control (DTSC) and approved by the Navy. Please note that DTSC does not certify environmental testing laboratories. The certification of environmental testing laboratories is administered by the California Department of Health Services. The draft document refers and/or specifies laboratory QA plan and other laboratory commitments without naming the actual laboratory (e.g., page 74, section 10.2.2 Laboratory Data). It is not clear whether or not an existing willing and able laboratory is ready to provide the referred laboratory QA plan and/or to perform the specified commitments.

2. Page 51, Table 15, parameters like Total Organic Carbon, Sulfide, Ammonia, Acid Volatile Sulfide/Simultaneously Extracted Metals (AVS/SEM) may not have specific contracted-required detection limits (CRDL), but the detection limits achievable by the methods either in terms of the method detection limit or quantitation limit used for analyses should be provided.

3. Page 70, section 9.3 states that the laboratory will analyze other QC samples that measure the laboratory's analytical accuracy, precision, and representativeness. It is not clear how the analysis of QC samples would measure the representativeness of the laboratory. Representativeness

normally is considered a quality measure for sampling. At the laboratory level, representativenss may involve sub-sampling and sample homogeneity.

4. Page 77, section 11.0 discussed performance, system, and field audits. It is generally too brief and not specific.

   Examples are: "Audits will be performed at scheduled intervals by the QA program manager, project QA officer, or senior technical staff". "Scheduled intervals" should be made specific such as once per month or once per three months, etc.

   "Audits may include reviews of project plan adherence, training statue, health and safety procedures, activity performance and records, budget status, QC data, calibrations, conformance to SOPs, and compliance with laws, regulations, policies, and procedures". The statement <u>may</u> require the audits to include none, one or more of the elements mentioned.

   "A performance audit is a review of the existing project and QC data to determine the accuracy of a total measurement system or a component of the system. Laboratory performance audits are conducted routinely by the Navy and PRC". A very important aspect of a performance audit is the analysis of proficiency test samples (performance evaluation samples) by the concerned laboratory. So, the analysis of proficiency test samples should be considered. "Routinely" should be made specific as discussed above with regard to "scheduled intervals".

5. Page A4, Table A-4, it is not clear why precision in terms of relative percent difference (RPD) is NA (not applicable) for analyses like Organotins, 1,3-Dinitrobenzene, and AVS/SEM while the recovery limits are available.

If you have any questions, please feel free to contact Fred Seto at (510) 540-3003.

cc: Bart Simmons, Ph.D.
Cindy Dingman
James Cheng
Lorna Garcia

State of California

Memorandum

To : Mr. Cyrus Shabahari
Office of Military Facilities
Department of Toxic Substances Control
700 Heinz Avenue, Suite 200
Berkeley, California 94710

Date : August 15, 1995

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To Cyrus Shabahari	From Denise
Co.	Co.
Dept 8-571-3819	Phone # 9 to 8
Fax #	Fax # 453-1070

From : Department of Fish and Game

Subject : **REVIEW OF DRAFT QUALITY ASSURANCE PROJECT PLAN FOR PHASE IB ECOLOGICAL RISK ASSESSMENT WORKPLAN, HUNTERS POINT ANNEX (5920/60120/NTX 403:40)**

The California Department of Fish and Game has reviewed the above-referenced Quality Assurance Project Plan (QAPP) for the subject facility. The primary purpose of this review is to provide scientific oversight and recommendations from the Department's environmental chemistry, toxicology, and field sampling expertise and experience. We appreciate the opportunity to provide this review, and believe that these comments will improve the QAPP.

GENERAL COMMENTS

The Department commends the Department of Navy contractor, PRC Environmental Management, Inc., for submitting a generally well-written draft QAPP that appears to contain all required and appropriate sections of a QAPP. Our specific comments which follow are intended to try to further strengthen an already well-designed QAPP.

The QAPP references several other pertinent documents, such as the field sampling plan (FSP) and the Phase 1B work plan (WP), stating that they are companion documents to this QAPP. Because the Department has not reviewed those document and is evaluating the QAPP as a stand-alone document, the reviewer was at a disadvantage to understand the specifics of the work to be performed, including the underlying scientific strategy that is intended to accomplish the goals of the project, and place that work in the context of the QAPP. It would be very helpful to provide a summary of each of these documents in the QAPP, either as an appendix or within the body of the QAPP. Many of our comments may therefore make suggestions or ask questions that are explained in documents separate from this QAPP, but we are unaware of the references in the other documents. While these documents are apparently available, we would still request that a summary of the FSP and the WP be provided in the QAPP. As it is, there is no way to know the type of sampling to be done, the frequency of sampling, location, depth, volume, media, and eventual disposition of the samples (e.g., homogenized for chemistry).

The project description at the start of the QAPP should be expanded greatly to provide more specific information, for reasons given in the previous paragraph, regarding the goals and objectives of this project to provide a description of the scientific approach being implemented as well as the general rationale behind the scientific approach and a brief summary of how the data will be analyzed and utilized for decision-making.

The sections pertaining to the chemical analyses to be performed were rather disjointed and confusing. In the final document, it would be helpful to include the precision and accuracy objectives contained in Appendix A in the main body of the report when discussing laboratory analytical procedures. Perhaps, again, more specific information is provided in other associated documents such as the FSP or WP, but it would be helpful to provide a summary of any information on chemical analyses to be performed. Specific comments will be provided below on this topic. Not knowing the rationale behind the conducting of pore water chemical analyses (we assume it will be to associate toxicological effects), it is difficult, again, to judge the adequacy of the method detection limits requested.

The San Francisco Bay Regional Water Quality Control Board (RWQCB), in cooperation with the Department and the State Water Resources Control Board, conducted a research program on the establishment of sediment reference sites for toxicological analyses in San Francisco Bay. We strongly urge that you contact Ms. Karen Taberski, of the RWQCB staff (510-286-1346), regarding this program and incorporate findings from this program for selecting reference sites for your project along with input and consultation with the Department. RWQCB is encouraging contractors conducting toxicological and chemical analyses in the Bay to utilize these sites since they demonstrated consistency through time and with several different toxicity tests during the research program. Additionally, you should discuss with Ms. Taberski the effort to encourage standardization of such items as test duration of the urchin development test and depth of sediment to sample for San Francisco Bay.

SPECIFIC COMMENTS

Page 1, last paragraph: "This QAPP discusses field protocols for sample collection and handling, equipment decontamination,..." We were unable to locate these items in the document and they assisted our review by providing details essential to a QAPP. It is recommended that this information be included in the final document. This comment is similar to those general comments made above regarding the need to provide summaries of items which may appear in other documents, but which are very pertinent for inclusion in this QAPP for adequate review to be performed.

Page 2, first paragraph: This paragraph provides a brief text summary of protocols that will be followed for various analytical procedures. Again, it would be helpful if summary information had been provided on these procedures as there are many opportunities for contract laboratories to alter protocols to improve performance which are of interest to those reviewing such work. Are performance-based methodologies for organic and inorganic constituent analyses going to be allowed? Will interlaboratory testing be performed? There are numerous options and choices to be made in following protocols that should have been described. Mention is made of fish tissue analysis. What fish tissue will be analyzed? There is no mention in this QAPP of the capture and subsequent analysis of fish for contaminants.

Page 10, Section 3.0 (Objectives for Measurement): The QAPP would be improved by provided a table containing a summary of measurement objectives for all analyses being performed (accuracy requirement, precision requirement, completeness goal). It would also be helpful seeing these topics further explained and summarized in the laboratory analytical section for the chemical analyses (the reviewer can examine the various requirements for a particular analysis in one cohesive section, rather than scattered throughout the QAPP).

Page 34, Section 8.0, paragraph one: "Other EPA and Navy-approved analytical methods may be selected, with approval from the Navy RPM, if existing DQO's are met or exceeded." We are glad to see this statement in this analytical procedures section, and fully encourage the utilization of performance-based methodology, including interlaboratory testing. We recommend consultations with Department scientists on selection of alternative analytical methodologies and schemes.

Tables 11, 12, 13, 14, 15: An explanation of the utility of the pore water analyses should have been provided in this QAPP, in order to be able to evaluate and provide recommendations on the appropriateness of the detection limits listed in the referenced tables. While we fully encourage the utilization of pore water chemistry and toxicity testing in order to be able to evaluate potential ecological impacts, we would like to know the objectives of the Navy for conducting these analyses. The majority of the pore water detection limits presented in the QAPP are very high so that mostly nondetects will result from the analyses. Other studies done from fairly similar areas in San Francisco Bay (i.e., ERA of Marine Sediments at United Heckathorn Superfund Site near Richmond, EPA 1994) have shown actual levels of many of the listed pore water analytes to be below most of the detection limits listed for this study. One major flaw in the use of liberal detection limits will be an inability to evaluate any toxicity effects. What would seem to be most relevant is the effects levels for toxicity testing, i.e., ecological relevance. The volumes of pore water prior to extraction appear to be more than enough to be able to utilize lower detection limits than listed, and we believe that lower limits can be achieved with little extra chemical effort. We recommend an re-examination of the detection limits selected and suggest a that a discussion or explanation be provided if it cannot be accomplished. Also, we assume that dissolved organic carbon content will be conducted on all pore water samples, but do not see reference to this in the QAPP. This should be included in the final QAPP document.

Page 51, Table 15: There are no detection limits listed for sulfide or ammonia in overlying water or pore water which will be conducted for toxicity tests (we assume, based on the QAPP). Why is this? Also, we feel very strongly that hydrogen sulfide should be measured in all toxicity test chambers, in addition to ammonia.

Page 53, Section 8.9: The text states "pore water will be analyzed for sulfides", yet there is no information pertaining to hydrogen sulfide analyses (detection limits, accuracy and precision requirements). Equally confusing, the text does not state that ammonia will be measured in pore water. Will ammonia be reported as total ammonia, unionized ammonia, or (preferably) both? Does the method for grain size analysis provide for just percent fines?

Page 53, Section 8.10: Will ammonia and hydrogen sulfide be measured in pore water and overlying water in toxicity test chambers? How will the data be reported for these parameters (see above comment)? We would also urge, once again, the incorporation of the San Francisco Bay RWQCB's Reference Site Program's sampling locations for field sediment reference sites for your project. What range of grain size, hydrogen sulfide and ammonia are you trying to select against for the species and protocols of choice in this program? We recommend modification of the final QAPP to include these considerations.

Page 57, Overlying Water Quality: Again, we strongly request the inclusion of the measurement of hydrogen sulfide in toxicity test chambers in overlying water (and pore water, too) for the amphipod test described. If this is planned to be done, the QAPP does not state this.

Page 57, "Salinity, pH, and ammonia in the overlying water and sediment grain size must be within tolerance limits of *E. estuarius*." Again, we request the inclusion of hydrogen sulfide as a parameter, and we also must ask that a table be provided that clearly states the tolerance limits of the amphipod that are being utilized.

Page 59: "Statistical test used and results of analysis of the data". How will the toxicity test data be analyzed, and how will the analyses be interpreted (i.e., what level of amphipod survival will be deemed a cutoff for toxic/nontoxic)? This needs much more discussion, and we suspect and hope that it has been in other documents. Again, a summary of this information, if it is indeed in other documents, is very necessary here in the QAPP to understand how the data will be utilized and to be able to comment on the appropriateness of the chosen statistical analytical method as well as the interpretation of what any resulting data means. This comment applies to all toxicity tests being conducted. Additionally, it applies to chemical analyses being conducted: what level of chemical contamination is "acceptable", what level is "contaminated"? All of these should have been discussed in this QAPP in order to more fully be able to properly provide comments on the overall project strategy.

Page 60, test duration: "48 to 96 hours" is listed as the test duration; we highly recommend at least 72 hours as a minimum duration, and suggest that you incorporate the protocols adopted in the San Francisco Bay

RWQCB Reference Site Program for standardized test duration for the sea urchin development test.

Page 60: "Salinity and ammonia in the test solution (pore water) must be within tolerance limits of *S. purpuratus*." Again, we request the inclusion of hydrogen sulfide as a parameter, and we also must ask that a table be provided that clearly states the tolerance limits of the urchin larvae that are being utilized.

Page 62, "Statistical test used and results of analysis of data": Please see comment on same topic from page 59 above.

Section 9.3: It is unclear what constitutes a matrix spike. What percent of analytes within a class of compounds are being required for this? At what level will you be doing spike enrichments (10x, 100x...)? Is there any reason why SRM's (or CRM's) are not being conducted for this project?

We thank you for the opportunity to provide input on this draft QAPP. If you have any questions or comments and wish to discuss any details of this review, please contact Dr. Michael Martin at (408) 649-7178 or me at (916) 653-4875.

John Turner, Chief
Environmental Services Division

cc: Department of Fish and Game

Dr. Michael Martin
Monterey

Mr. Joe Milton
Sacramento

Mr. Max Puckett
Granite Canyon